White Paper Report

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Mukurtu: an Indigenous Archive Tool
NEH Digital Start Up Grant: HD-50972-10
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Washington State University
White Paper

A. Project Activities

The main focus of the Digital Start Grant was to leverage the alpha version of the Mukurtu archive's backend to create a beta version that would be accessible for testing within indigenous communities globally. Our aim was to create a beta version of Mukurtu that was built on the framework of indigenous cultural protocols and also maintained the importance of international standards-based content management systems and public access to cultural materials by providing for a layered approach to content management. Mukurtu allows for an enhanced set of access parameters at more granular levels and adds to existing metadata standards and display practices by producing a unique layered-knowledge core for metadata display and a robust feedback loop for sharing metadata and content that then encourages multiple types of engagement with these unique cultural materials.

<u>Primary Work:</u>
This work included: porting to Drupal 7; developing cultural and sharing protocol functionality; redefining metadata standards to include traditional knowledge and TK licenses and label options; creating complete digital heritage collections functionality; and creating a one-click install profile.

1. **D7 and Protocols:** The first major effort of this grant cycle was to port the Mukurtu code over to the Drupal 7 content management system. Using Drupal provides us with a sustainable platform with substantial stability and investment (over 390,000 active installations worldwide) and an international base of developers with whom to work and draw on in the creation of a Mukurtu development and user community. Specifically, Drupal 7 had core features such as Organic Groups and Panels and Views that allowed us to redefine the architecture of Mukurtu to allow for maximum flexibility and granular level access protocols that we define as: cultural protocols and sharing protocols that work together to create a web of access levels to both groups and contents, at the item, collection and group levels. In fact, this portion of the code—the "strict community" protocol—was released back to the Drupal community by our development team, CivicActions. Owen Barton the lead developer on the team who created this feature released it back to the Drupal developer community summarizing its application: "The current OG access model (and indeed most of Drupal's) is based on a union of grants, that is to say a user with ANY of the grants in question will be given access. This patch adds a new privacy type for groups that means a user will be required to

have membership of ALL groups of this type (i.e. an intersection) before getting access to this content" (http://drupal.org/node/1256956).

2. **Traditional Knowledge & TK Licenses and Labels:** Standard CMS use traditional metadata standards such as MARC, EAD and Dublin Core. Mukurtu provides for these international standards as well as what we have called: Mukurtu Core. One of the main differences in Mukurtu core is its emphasis on user-defined metadata fields, categories, free tagging and narration. One key feature is the "traditional knowledge" field. We purposely left this field as an open and flexible field because we know that while all indigenous communities posses TK about their cultural heritage materials, that knowledge doesn't come in one form, nor does it conform to pre-determined fields. We also made it its own tab because we wanted to highlight the significance of traditional knowledge; these are not comments or side remarks, these aren't "add-ons" or after thoughts, but these are central to the life of indigenous cultural heritage materials. Related to this are our unique "Traditional knowledge licenses and labels." In collaboration with WIPO's Cultural heritage division and IP lawyers Wendy Seltzer and Jane Anderson, we created the TK licenses and labels as a way for communities to define the access and use protocols for their materials for external users. That is, while the cultural and sharing protocols work internally within a community to define access (by gender, ritual status, clan etc.), some material will certainly be open or public and made available to third parties. It is this material and materials that is already in the public domain that indigenous communities want to be able to access both legal licenses and educative labels to define their own notions of access and circulation for the materials. Within Mukurtu Core, users can choose from traditional all rights reserved copyright, Creative Commons or TK licenses and labels to best suit their individual and community needs. Just like Creative Commons licenses ten years ago, these new TK licenses and labels are works-in-progress. That is, as communities begin to use them we will see where the gaps are--what needs tweaking and what is working well. (http://www.mukurtu.org/wiki/Manual:Traditional_Knowledge_Licenses)

3. **Digital Heritage:** In Mukurtu creating digital heritage collections emphasizes the unique relational content that encompasses most indigenous cultural materials. For example, an image of a woven basket might have a song associated with it that is traditionally sung as it is being made or used; there maybe an oral history associated with it and a geographic marker. All of these items make up one digital heritage object. In Mukurtu it was important for us to allow these objects to sit in relation to one another to tell a complete narrative. The items that make up the object still all have unique identifiers, completed metadata including traditional knowledge, but also are showcased in a bundle.

4. **One-Click Install Profile:** Because the core user groups for Mukurtu include many small and remote communities that may not have technical support or an onsite IT staff we made creating an easy-to-use install package one of our number one (even though expensive) priorities. Because Mukurtu sits on top of Drupal7 we were able to create a Mukurtu "install profile" that downloads and installs in one-click. Users must have Drupal installed, and once they do, Mukurtu can be configured as an "installation profile" and up and running with one click.

<u>Secondary activities</u>:

This work included the production of product website (www.mukurtu.org) to act as a hub for the project's main product as well as educational materials and community resources; and outreach to indigenous communities for implementation and on-site testing.

1. **Project Website: www.mukurtu.org**
    The project website is a crucial point of contact for potential users and funders. As such we dedicated ourselves to creating an informational and easy-to-navigate site that emphasized the core features and functions of the Mukurtu platform and encouraged people to get involved. Creating open source software provides a perfect opportunity for engagement at various levels with and between a range of potential stakeholders. In this case, librarians, archivists, indigenous communities, software developers and researchers all with different needs, but with an overlapping goal of creating a platform that addresses the specific needs of indigenous communities. The website links communities of Mukurtu users, points to a wiki with full instructions about Mukurtu, and provides resources for further engagement.

2. **Outreach and onsite testing**
    Key to the success of any development project is user buy in. Mukurtu was in a unique position because we started as a grassroots project and had a core group of potential users that were looking for a product to match their needs. Outreach was facilitated by the direct engagement of communities who sought us out. Outreach included conferences, seminars and one-on-one meetings. Testing Mukurtu—as a beta version—was key. We tested Mukurtu at every stage with small user groups to stay focused on specific feature sets. We also have a dedicated site, our "Premiere" site for users who wish to try the platform without installing it on their own servers. Each page on the Premiere site has feedback forms built in and provides a place for users to test and comment on features (http://premiere.mukurtu.org/)

3. **Publicizing Mukurtu**
    We publicized Mukurtu in 3 main ways: public speaking engagements, online media, face-to-face consultations. The PI, Dr. Kimberly Christen, presented the evolution of Mukurtu in nine different settings from local to

international conferences and at small meetings at the National Museum of the American Indian, the American Folklife Center and the Library of Congress, the Institute of Indigenous Languages and the American Philosophical Society. Dr. Christen also spoke on the BBC's Digital Planet radio program and was featured on the BBC's online news edition as well. Our other main publicity tool were two videos we produced explaining Mukurtu and our Traditional Knowledge licenses and labels (http://www.youtube.com/user/mukurtu?feature=watch).

B. Accomplishments

As we stated in our proposal, development of specific features directly linked to the concerns of indigenous communities was our number one priority as we moved Mukurtu to a beta platform. Of the ten original features we completed eight. The two we did not complete, on-the-fly recording and flexible templates are now currently in development with the IMLS grant we received this year. These unfinished features fell out of the scope of this production cycle because, after evaluation and consultation with both indigenous communities and our development team, we decided that porting to a Drupal 7 base and creating a one click install profile were higher priorities. On-the-fly audio recording is proving to be particularly challenging and we are likely to have to wait until the technology catches up with this particular need, but we are looking into low cost solutions and partnering with other open source projects with similar goals.

- Flexible templates
- Adaptable protocol features
- Easy-to-use administration pages for customization
- Indigenous language keyboards for data input in Indigenous languages
- On-the-fly recording
- Integrated mapping features to include Indigenous mapping strategies
- Flexible data fields for filtering content
- XML-based export/import system for interaction with collecting institution
- Easy to use intellectual property licenses
- Tags/documentation for content (at item and collections levels)
- Premiere online test site for latest version of Mukurtu CMS

C. Audiences

The project is a grassroots one that developed out of the specific needs of indigenous communities, libraries, archives, museums and cultural centers who are under-served by both by proprietary commercial off the shelf content management systems and their open source counterparts. Mukurtu filled this vacuum by providing a one-stop solution for indigenous groups looking for ways to manage their digital heritage that did not erase their cultural protocols and social systems. As of now, we have 103 people on our mailing list (from individuals to small Native institutions (Athna Heritage Foundation Cultural

Center) to the National Museum of the American Indian and 54 people signed up for our "Premiere" online site that allows them to test the software online.
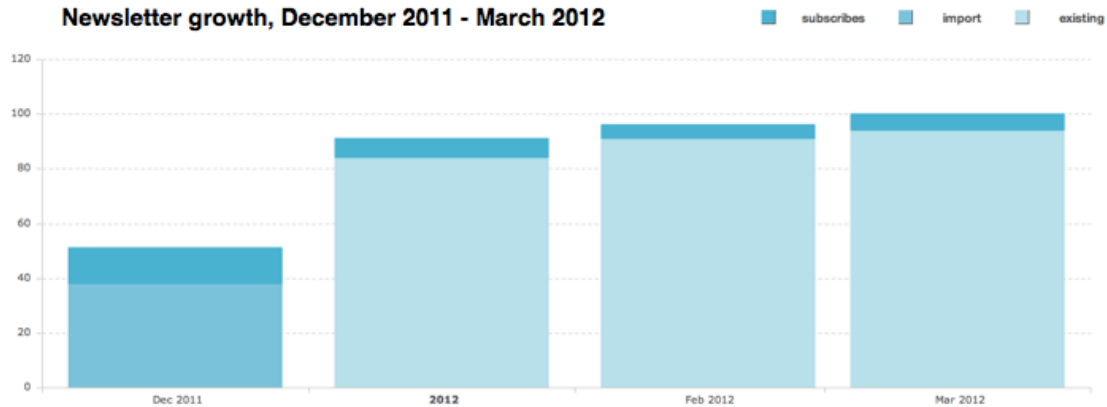
Mukurtu Users: Online Data

mukurtu.org Website Traffic
(2,783 visits from 1,448 unique visitors)
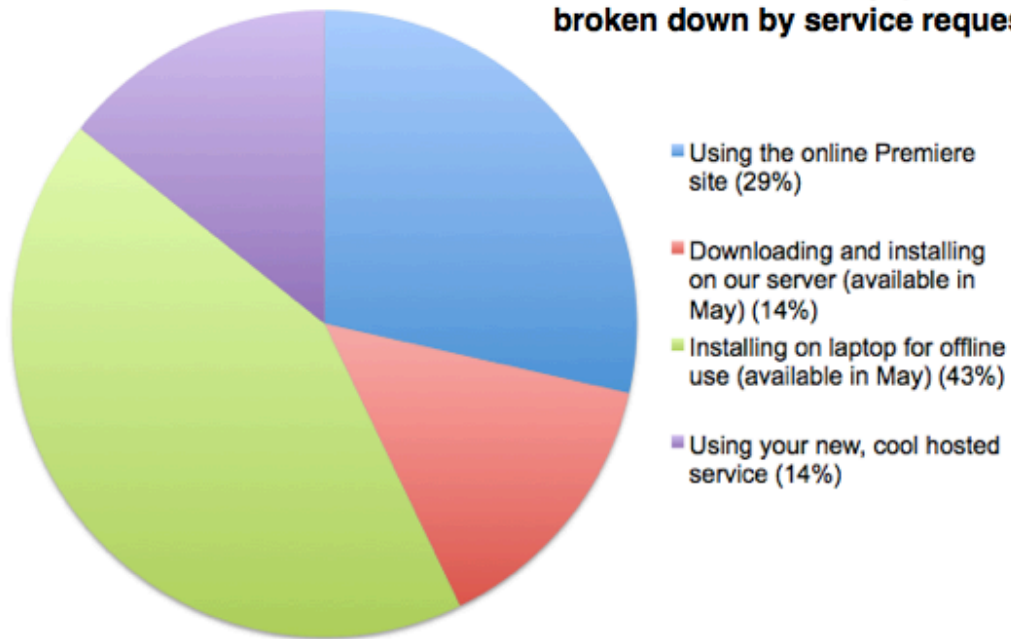
Nov 22, 2011 - Feb 22, 2012
Comparing to: Site

Mukurtu Newsletter Subscribers

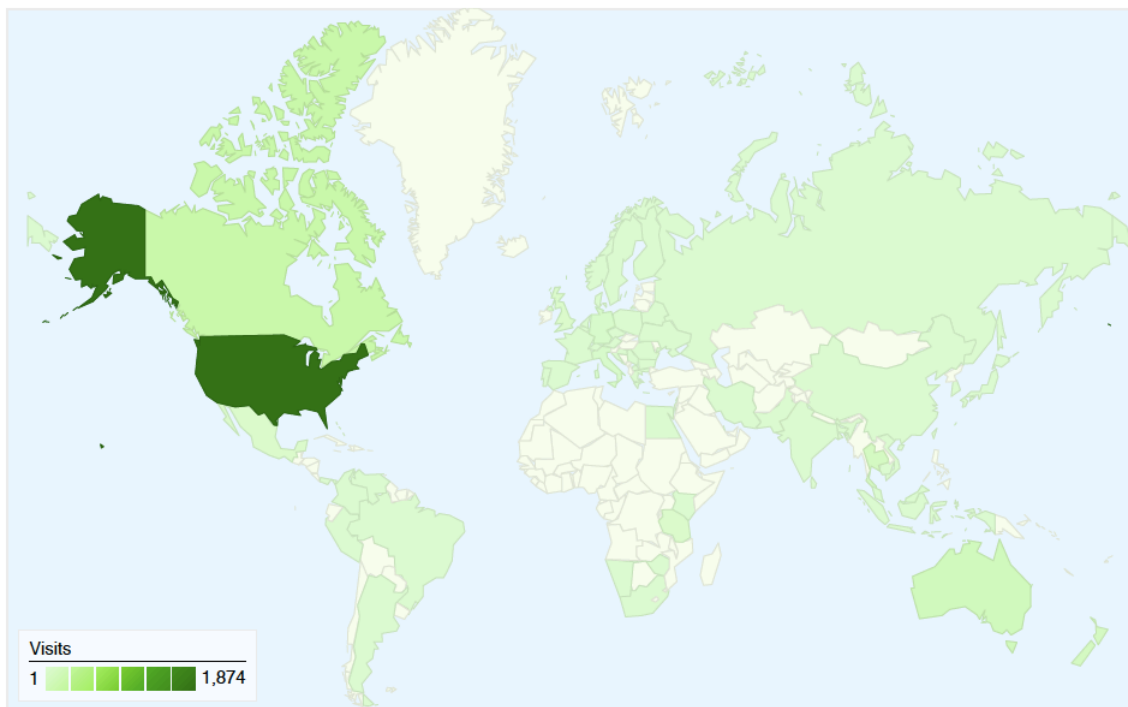Newsletter growth, December 2011 - March 2012   subscribes   import   existing

Mukurtu Premiere Users: @ http://premiere.mukurtu.org/

Premiere Users Group (40 users), broken down by service request

- Using the online Premiere site (29%)
- Downloading and installing on our server (available in May) (14%)
- Installing on laptop for offline use (available in May) (43%)
- Using your new, cool hosted service (14%)

www.mukurtu.org website traffic:

Visits
1 — 1,874

2,783 visits came from 63 countries/territories

Mukurtu YouTube Channel Views

	Top locations by views	Views	13–17 years	18–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65+ years	Gender
1.	United States	430	0.0%	4.2%	9.0%	58.0%	16.0%	11.7%	1.1%	
2.	Australia	99	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
3.	Canada	66	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
4.	New Zealand	38	0.0%	0.0%	27.2%	43.0%	29.8%	0.0%	0.0%	
5.	Thailand	25	0.0%	0.0%	29.6%	70.4%	0.0%	0.0%	0.0%	
6.	United Kingdom	8	0.0%	48.4%	51.6%	0.0%	0.0%	0.0%	0.0%	
7.	India	5	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
8.	Switzerland	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

C. Evaluation

Our online community gathering (described above) along with our feedback forms on the Mukurtu Premiere site are the two main ways we have evaluated the project. Thus far we have found that very few people use the feedback forms embedded on each page of the Premiere site. There are many reasons for this likely, and this is a common issue. The online gathering was very successful in allowing us to get direct user feedback. So we have gone to "targeted" sets of questions with small user groups now (with our IMLS funding).

Feedback from the online gathering included very specific requests for more integration with pre-existing tools to general praise for the functionality. The gathering was recorded and archived on our wiki. In the three months since the event on December 14 2011 that wiki page has been accessed 2,984 times (http://www.mukurtu.org/wiki/Online_Community_Gathering_December_14_2011)

D. Continuation of the Project

Mukurtu CMS is continuing at full speed. In no small way the NEH startup Grant contributed to our being awarded a $497, 936 IMLS National Leadership Grant, Advancing Digital Resources. This three-year grant along with another $484, 772 in matching funds will allow us to complete a feature complete 1.0 version of Mukurtu CMS by Fall 2012. This grant allowed us to hire a professional Drupal development company, CivicActions (http://civicactions.com) and move the development of Mukurtu into a set of engineering sprints that will result in a free and open source platform easily downloadable anywhere. We have a three-year engineering and outreach plan that including ten key new features, online tutorials, face-to face workshops and promotional media campaigns. We are now partnering with Pantheon at UC Berkeley to create a hosted plan for Mukurtu to

allow communities who do not have the capacity to host a site the option for off site hosting on a sliding scale.

Our institutional partners have increased in this new phase as well to include: the American Folklife Center at the Library of Congress, the National Anthropological Archives at the Smithsonian Institution, the National Museum of the American Indian at the Smithsonian Institution, the Association of Tribal Archives, Libraries and Museums, Adventure Learning @ the University of Idaho, the Zuni Public Libraries, the Citizen Potawatomi Nation, Aboriginal and Torres Strait Islander Data Archive, the Dharriwaa Elders Group, the Editing Modernism in Canada Project and the World Intellectual Property Organization, Traditional Creativity, Cultural Expressions and Cultural Heritage Section.

E. Long-Term Impact

By providing a CMS tailored expressly to the stated needs of indigenous communities, Mukurtu aims to facilitate the expansion of tribal cultural heritage materials to their source communities and thereby provide the educational and cultural resources necessary for cultural and linguistic revitalization. There is evidence from anthropologists, ethnomusicologists, and linguists that individual community-based digital archive and repatriation projects have led to traditions being revitalized, language programs growing and new knowledge creation based on community input surrounding these objects' return. For example, Ruth Phillips, director of the Great Lakes Alliance for the Study of Aboriginal Arts and Cultures, shows how digitally repatriated objects inserted into a shared relational database at the University of British Colombia's Museum of Anthropology have led to new museum classification systems and taxonomies based on input from tribal elders. Dr. Aron Crowell, the Alaska Director of the Smithsonian Institution's Arctic Studies Center, has discussed how their eight-year program, "Living Our Cultures, Sharing Our Heritage," has spawned an intense interest in Native language revitalization in Alaskan Inuit communities. Mukurtu, steps in where these local projects leave off to provide a sustainable and adaptable platform built specifically for growing collections with a cultural emphasis. Instead of one off "Cinderella" projects, Mukurtu will provide a sustainable, interoperable platform for any community to adopt and use to fit their digital cultural heritage management needs.

With our current funding and development in place over the next 5 years Mukurtu will: 1) increase the collection, retrieval, and documentation of indigenous cultural heritage materials by and through tribal libraries, archives, museums and cultural centers, 2) aid in the preservation of indigenous cultural heritage, 3) expand the public record concerning indigenous cultural heritage and history and 4) create a platform for engagement and exchange between national collecting institutions and tribal libraries, archives and museums and thereby facilitating an increased understanding of and attention to indigenous cultures, histories and languages. Mukurtu CMS will allow indigenous communities to expand their own collections, engage with national and regional collecting institutions to share materials and in

doing so create an expanded national collection of tribal cultural heritage materials.

The long-term impact of the Mukurtu CMS platform will be measured both by its use within indigenous communities, libraries, museums and archives and also, importantly, by its ability to connect indigenous communities and institutions who hold indigenous digital cultural heritage. Cordiella Hooee, librarian at Zuni Public Library and a member of the Mukurtu Advisory Board, expressed the need for Mukurtu this way: "Mukurtu will give tribal libraries such as ours a way to meet our need for a system that specifically addresses management and dissemination of cultural materials."[1] In the case of the Zuni Libraries, Mukurtu will provide access to as of yet unheard sound recordings from the Library of Congress American Folklife Center to Zuni community members. To date these materials have not been returned because the Zuni wanted to make sure the recordings were made available according to their own cultural protocols and social structures. Mukurtu provides this platform. In the long term, then, the value of Mukurtu CMS will not only be in how many collections are returned and made available to indigenous communities globally, but in the ways in which those collections are accessed, managed, shared and annotated by the communities themselves in accordance with their own dynamic cultural models.

Currently, we are also pursuing a partnership with Adventure Learning @ the University of Idaho that will unite the power of Mukurtu to link communities and content in culturally responsive way with the need for educational outreach. The AL@Mukurtu platform will enable K-12 students, teachers and community members to share collected data, local stories, pictures and videos of their changing landscape. From the shared artifacts and experiences, groups will embark on defining solutions to their local issues through a shared network that leverages both STEM methodologies and local traditional knowledge to encourage cross-cultural and global dialogues about local issues. These types of partnerships will advance the mission of Washington State University and allow us to seek external funding from non-federal sources. We are currently drafting RFPs to the Google Faculty Research Program, Hewlett-Packard and National Geographic to fund these spin-off projects.

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[1] Personal communication, January 10, 2011